

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1-21. (canceled).

22. (new) In a method of making a pneumatic tire comprising a carcass extending between bead portions, a belt disposed radially outside the carcass in a tread portion,

a tread rubber disposed radially outside the belt,

a sidewall rubber disposed axially outside the carcass in each sidewall portion,

a bead rubber disposed along the axially outer surface and bottom surface of each said bead portion, and

a bead apex rubber disposed between a carcass ply turnup and carcass ply main in each said bead portion,

which comprises:

making a green tire by winding unvulcanized rubber materials for the tread rubber, sidewall rubber, bead rubber and bead apex rubber; and

vulcanizing the green tire in a mold,

the improvement comprising

a process of making at least one of annular rubber components including said tread rubber, sidewall rubber, bead rubber and bead apex rubber, which process comprising

determining a cross sectional shape of the annular rubber component,

allotting thicknesses and widths to unvulcanized rubber strips, based on said determined cross sectional shape of the annular rubber component which is formed by disposing said unvulcanized rubber strips having the allotted thicknesses and widths upon one another, said thicknesses being in a range of from 0.5 to 4.0 mm,

determining relative displacement of circumferential ends of said unvulcanized rubber strips,

making a layered structure of said unvulcanized rubber strips by disposing said unvulcanized rubber strips upon one another so that the circumferential ends of said unvulcanized rubber strips have the determined relative displacement, wherein

the first circumferential ends on one side of the layered structure are gradually shifted from a strip disposed innermost when the layered structure is wound on a drum to a strip disposed radially outermost when the layered structure is wound on a drum, and the second circumferential ends on the other side of the layered structure are gradually shifted in the reversed manner to the first circumferential ends,

winding said layered structure once around a drum, and

connecting the circumferential ends of the wound layered structure to each other by butt joining the first circumferential ends with the second circumferential ends, respectively, so that the joints of said unvulcanized rubber strips are shifted from each other in the circumferential direction.

23. (new) The method of making a pneumatic tire according to claim 22, wherein

said at least one of annular rubber components is the tread rubber, and

the thicknesses of the unvulcanized rubber strips are in a range of from 0.5 to 2.0 mm.

24. (new) The method of making a pneumatic tire according to claim 22, wherein

said at least one of annular rubber components is the sidewall rubber, and

the thicknesses of the unvulcanized rubber strips are in a range of from 0.5 to 2.0 mm.

25. (new) The method of making a pneumatic tire according to claim 22, wherein

said at least one of annular rubber components is the bead apex rubber, and

the thicknesses of the unvulcanized rubber strips are in a range of from 0.5 to 2.0 mm.

26. (new) The method of making a pneumatic tire according to claim 22, wherein

said at least one of annular rubber components is the bead apex rubber, and

the allotted widths of the unvulcanized rubber strips are gradually decreased from the radially innermost strip to the radially outermost strip.

27. (new) The method of claim 26, in which the thicknesses of the unvulcanized rubber strips are in a range of from 0.5 to 2.0 mm.

28. (new) The method of making a pneumatic tire according to claim 22, wherein

the allotted widths of the unvulcanized rubber strips are gradually decreased from the radially innermost strip to the radially outermost strip.

29. (new) The method of making a pneumatic tire according to claim 22, wherein

the unvulcanized rubber strips are allotted the same widths.

30. (new) The method of making a pneumatic tire according to claim 22, wherein

when the layered structure is wound around a drum, an angle α defining the angular circumferential shift between the joints of the adjacent unvulcanized rubber strips is at least 15 degrees, and an angle β defining the angular circumferential shift between the joint of the radially innermost unvulcanized rubber strip and the joint of the radially outermost unvulcanized rubber strip and encompassing the joints is at most 180 degrees.

31. (new) The method of making a pneumatic tire according to claim 24, wherein

when the layered structure is wound around a drum, an angle α defining the angular circumferential shift between the joints of the adjacent unvulcanized rubber strips is at least 15 degrees, and an angle β defining the angular circumferential shift between the joint of the radially innermost unvulcanized rubber strip and the joint of the radially outermost unvulcanized rubber strip and encompassing the joints is at most 180 degrees.

32. (new) The method of making a pneumatic tire according to claim 22, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

33. (new) The method of making a pneumatic tire according to claim 23, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

34. (new) The method of making a pneumatic tire according to claim 24, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

35. (new) The method of making a pneumatic tire according to claim 26, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

36. (new) The method of making a pneumatic tire according to claim 27, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

37. (new) The method of making a pneumatic tire according to claim 28, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

38. (new) The method of making a pneumatic tire according to claim 29, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

39. (new) The method of making a pneumatic tire according to claim 30, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.

40. (new) The method of making a pneumatic tire according to claim 31, in which at least two of the unvulcanized rubber strips are different from each other in respect to rubber composition.